

Amendments to the Specification

- 1) Please insert the following subtitle at page 1, below the title:
Background
- 2) Please insert the following subtitle at page 4, line 1:
Summary
- 3) Please insert the following subtitle and text at page 4, line 22:
Brief Description of the Drawings

For a further understanding of the nature and objects for the present invention, reference should be made to the following detailed description, taken in conjunction with the accompanying drawings, in which like elements are given the same or analogous reference numbers and wherein:

- Figure 1 illustrates a stylized view showing the principle of the sonification step using the TOFD technique in accordance with one illustrative embodiment of the present invention;
- Figure 2 illustrates a block diagram of the apparatus in accordance with one illustrative embodiment of the present invention;
- Figure 3 illustrates a front view of the 'acquisition' part of this apparatus in accordance with one illustrative embodiment of the present invention;
- Figure 4 illustrates a plan view from above, corresponding to Figure 3;
- Figure 5 illustrates an alternate implementation similar to Figure 3, illustrating the lateral shift of the transducers used for implementing the TOFD technique;
- Figure 6 illustrates an alternate implementation similar to Figure 3, illustrating the adaptation of an element to be inspected, which has a radius of curvature;
- Figure 7 illustrates the principle of implementation of the creeping wave technique in accordance with one illustrative embodiment of the present invention;
- Figure 8 illustrates an alternate implementation of the principle of the creeping wave technique in accordance with one illustrative embodiment of the present invention;
- Figure 9 illustrates a diagram of TOFD detection on a wide weld in accordance with one illustrative embodiment of the present invention;
and

- Figure 10 illustrates diagrammatically the principle of combining TOFD detection with creeping wire detection in accordance with one illustrative embodiment of the present invention.
- 4) Please insert the following subtitle at page 4, after the above-inserted paragraphs:
Description of Preferred Embodiments
- 5) Please delete the paragraphs at page 9, line 24 through page 10, line 14
- 6) Please replace the paragraph at page 10, line 16, with the following:
As illustrated in ~~figure~~ Figure 1, the invention relates to the TOFD inspection of a weld 1, which joins two metal workpieces 2, 3 together, edge to edge, such as plates, in particular those with beveled edges, the assembly having a given thickness e, typically between 5 mm and 100 mm.
- 7) Please replace the paragraph at page 14, line 7, with the following:
In use, as illustrated in ~~figure~~ Figure 3, the separation E of the two transducers 5, 6, more particularly of their respective points of emergence 26, is adjusted according to the width and the thickness of the weld 1.
- 8) Please replace the paragraph at page 14, line 36, with the following:
As illustrated in ~~figure~~ Figure 5, a lateral shift D of the combination of the two transducers 5, 6, on one side or the other of the center of the weld 1, can help in the search for flaws at the border of this weld 1.
- 9) Please replace the paragraph at page 15, line 1, with the following:
Finally, as illustrated in ~~figure~~ Figure 6, by adjusting the inclination of the two transducers 5, 6 it is possible to adapt the apparatus to an element to be inspected that has a relatively large radius of curvature.
- 10) Please replace the paragraph at page 18, line 1, with the following:
As shown in ~~figure~~ Figure 8, the transducer 57 is passed in succession on either side of the weld 50 and the longitudinal sound waves are sent at the angle β of 76° and at a frequency of 2 MHz, thereby allowing complete sonification of the upper volume of the weld 50.

- 11) Please replace the paragraph at page 18, line 12, with the following:

When the weld 50 has two large a width, the inspection may be supplemented by offset passes in TOFD mode, as shown schematically in ~~figure~~ Figure 9 by means of the device comprising the transducers 5, 6 of figure 1, thereby making it possible to cover the entire width to be inspected, that is to say the entire heat-affected zone 58 of the welding.

- 12) Please insert the following paragraph at page 19, line 20:

It will be understood that many additional changes in the details, materials, steps and arrangement of parts, which have been herein described in order to explain the nature of the invention, may be made by those skilled in the art within the principle and scope of the invention as expressed in the appended claims. Thus, the present invention is not intended to be limited to the specific embodiments in the examples given above.

- 13) Please replace the subtitle at page 20, line 1, with the following text:

CLAIMS What is claimed is:

- 14) Please insert the following subtitle and text to new page 24, line 1:

Abstract of the Disclosure

The invention concerns a method for non-destructive ultrasonic control, combining time-of-flight diffraction (TOFD) and inclined longitudinal wave techniques, of weld joints assembling two abutted parts. The method consists of using the time-of-flight diffraction technique, displacing in the longitudinal or circumferential direction, along the weld joint to be controlled, at least one pair consisting of a first transducer and of a second transducer, one transmitting and the other receiving ultrasonic waves, these transducers being laterally positioned on either side of the joint to be controlled, these transducers comprising piezoelectric ceramics or crystals. Furthermore, it consists of displacing along the welded joint to be controlled, using the inclined longitudinal wave technique, at least a third transducer, so as to detect any defect of the joint located at a thickness ranging between 0.5 mm and 15 mm.